

**CLAIMS**

1. Process for manufacturing an article comprising one or more superposed layers each less than 5 centimetres thick, obtained by using a composition comprising a hydraulic binder and at least one compound chosen from:
  - an organic compound comprising at least two hydrophilic functions and a hydrophobic chain, and
  - a polyamide oligomer comprising less than 20 repeating units.
2. Manufacturing process according to Claim 1 characterized in that the composition comprises a latex.
3. Manufacturing process according to Claim 1 or 2, characterized in that the composition comprises fibres.
4. Manufacturing process according to any one of Claims 1 to 3, characterized in that the composition comprises from 0.05% to 10% by weight of the said organic compound relative to the total weight of hydraulic binder.
5. Manufacturing process according to any one of Claims 2 to 4, characterized in that the composition comprises from 0.1% to 15% by weight of latex relative to the total weight of hydraulic binder.
6. Manufacturing process according to any one of Claims 3 to 5, characterized in that the

composition comprises from 0.1% to 10% by weight of fibres relative to the total weight of hydraulic binder.

7. Manufacturing process according to any  
5 one of Claims 1 to 6, characterized in that the hydrophilic functions of the organic compound are functions chosen from acid, acid halide and acid anhydride functions.

8. Manufacturing process according to any  
10 one of Claims 1 to 7, characterized in that the organic compound comprises a hydrophobic chain chosen from aliphatic, arylaliphatic, aromatic and alkylaromatic chains.

9. Manufacturing process according to one  
15 of Claims 1 to 8, characterized in that the hydrophobic chain comprises from 2 to 30 carbon atoms and preferably from 4 to 13 carbon atoms.

10. Manufacturing process according to any  
one of Claims 1 to 9, characterized in that the organic  
20 compound is chosen from the group consisting of succinic acid, sebacic acid, adipic acid, octanedioic acid, decanedioic acid, dodecanoic acid, brassylic acid and glutaric acid, and also the salts, derivatives and/or mixtures thereof.

25 11. Manufacturing process according to Claim 10, characterized in that the organic compound is a mixture of adipic acids, glutaric acid and succinic

acid.

12. Manufacturing process according to any one of Claims 2 to 11, characterized in that the latex is a water-insoluble film-forming polymer prepared from  
5 at least one ethylenically unsaturated monomer.

13. Manufacturing process according to Claim 12, characterized in that the ethylenically unsaturated monomer is chosen from styrene, butadiene,  $C_1$ - $C_{12}$  alkyl acrylic or methacrylic esters and the corresponding  
10 acids thereof, and vinyl esters.

14. Manufacturing process according to Claim 12 or 13, characterized in that the water-insoluble film-forming polymer is chosen from the group consisting of vinyl or acrylate homopolymers, and  
15 copolymers of vinyl acetate, of styrene/butadiene, of styrene/acrylate, of acrylic esters and of styrene/butadiene/acrylate.

15. Manufacturing process according to one of the preceding claims, characterized in that the  
20 composition comprises a water-soluble amphiphilic copolymer chosen from:

(i) at least one polymer obtained by polymerization

▪ of at least one ethylenically unsaturated  
25 monomer (I) of monocarboxylic or polycarboxylic acid type, or a carboxylic acid precursor of cyclic, linear or branched aliphatic or anhydride type, and

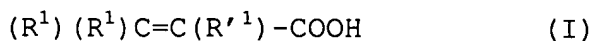
• of at least one monoethylenically unsaturated linear or branched hydrocarbon-based monomer (II),

(ii) at least one polymer derived from the polymerization of at least one monocarboxylic or polycarboxylic acid monomer (I) or cyclic, linear or branched, ethylenically unsaturated aliphatic anhydride, and comprising at least one saturated or unsaturated C<sub>4</sub>-C<sub>30</sub> hydrocarbon-based hydrophobic graft, optionally interrupted with one or more hetero atoms,

(iii) at least one polymer obtained by chemical modification, for instance esterification, transesterification or amidation, of a precursor polymer on the one hand comprising sites onto which a hydrophobic graft may be grafted, for instance carboxylic acid or ester sites, this hydrophobic graft on the other hand comprising carboxylic acid units or carboxylic acid precursor units.

16. Manufacturing process according to Claim 15, characterized in that, in variant (i)

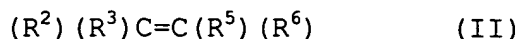
• the monomer (I) has the following formula:



in which formula the radicals R<sup>1</sup> and R'<sup>1</sup>, which may be identical or different, represent a hydrogen atom, a C<sub>1</sub>-C<sub>10</sub> hydrocarbon-based radical optionally comprising a

-COOH group, or a -COOH group; and

• the monomer of formula (II) has the following formula:



in which formula:

- the radical  $R^2$  represents a hydrogen atom or a linear or branched  $C_1$ - $C_{10}$  alkyl radical optionally substituted with hetero atoms;
  - the radical  $R^3$  represents a linear or branched  $C_1$ - $C_{10}$  alkyl radical optionally substituted with hetero atoms, or a radical  $-O-R^4$ , i.e. a vinyl ether, with  $R^4$  representing a linear or branched  $C_1$ - $C_{10}$  alkyl radical optionally substituted with hetero atoms;
  - the radical  $R^5$  represents a hydrogen atom or a linear or branched  $C_1$ - $C_{10}$  alkyl radical optionally substituted with hetero atoms;
  - the radical  $R^6$  represents a hydrogen atom or a linear or branched  $C_1$ - $C_{10}$  alkyl radical optionally substituted with hetero atoms;
- it being understood that at least one of the radicals  $R^2$ ,  $R^3$ ,  $R^5$  or  $R^6$  represents a linear or branched  $C_1$ - $C_{10}$  alkyl radical optionally substituted with hetero atoms.

17. Manufacturing process according to Claim 16, characterized in that the monomer of formula (I) is such that:

- one of the radicals  $R^1$  is a hydrogen atom;
- the other radical  $R^1$  represents a hydrogen atom, a  $-COOH$  group or a group  $-(CH_2)_n-COOH$  in which  $n$  is between 1 and 4, or a  $C_1$ - $C_4$  alkyl radical;
- $R'^1$  represents a hydrogen atom, a group  $-(CH_2)_m-COOH$

in which m is between 1 and 4, or a C<sub>1</sub>-C<sub>4</sub> alkyl radical.

18. Manufacturing process according to Claim 17, characterized in that the monomer of formula (I) is such that:

- 5    - one of the radicals R<sup>1</sup> represents a hydrogen atom,  
     - the other radical R<sup>1</sup> represents a hydrogen atom, a  
     -COOH or (CH<sub>2</sub>)-COOH group or a methyl radical, and  
     - R'<sup>1</sup> represents a hydrogen atom, a -CH<sub>2</sub>COOH group or a  
     methyl radical.

10            19. Manufacturing process according to Claim 18, characterized in that the monomer of formula (I) is chosen from acrylic, methacrylic, citraconic, maleic, fumaric, itaconic or crotonic acid or anhydride.

15            20. Manufacturing process according to Claim 19, characterized in that the monomer of formula (I) is maleic anhydride.

21. Manufacturing process according to Claim 16, characterized in that the monomer of formula (II) is chosen from ethylene, propylene, 1-butene,  
20 isobutylene, n-1-pentene, 2-methyl-1-butene, n-1-hexene, 2-methyl-1-pentene, 4-methyl-1-pentene, 2-ethyl-1-butene, diisobutylene (or 2,4,4-trimethyl-1-pentene), 2-methyl-3,3-dimethyl-1-pentene, isobutyl vinyl ether, methyl vinyl ether, 1-menthyl vinyl ether,  
25 phenyl vinyl ether or octadecyl vinyl ether.

22. Manufacturing process according to one of Claims 16 to 21, characterized in that the copolymer

of formula (i) is derived from the polymerization of maleic anhydride and isobutylene.

23. Manufacturing process according to any one of Claims 15 to 22, characterized in that the  
5 composition comprises from 0.1% to 5% by weight of water-soluble amphiphilic copolymer relative to the total weight of hydraulic binder.

24. Manufacturing process according to any one of Claims 3 to 23, characterized in that the fibres  
10 are chosen from the group consisting of glass fibres, carbon fibres, steel fibres, polyamide fibres, polyester fibres, poly(vinyl alcohol) fibres, polypropylene fibres and poly(acrylonitrile) fibres, derivatives thereof and/or mixtures thereof.

15 25. Manufacturing process according to any one of Claims 1 to 24, characterized in that the said hydraulic binder is based on at least one compound chosen from the group consisting of calcium silicate, calcium sulphate and calcium phosphate.

20 26. Composition for manufacturing an article comprising one or more superposed layers each less than 5 centimetres thick, comprising a hydraulic binder and at least one compound chosen from:

- an organic compound comprising at least two  
25 hydrophilic functions and a hydrophobic chain, and
- a polyamide oligomer comprising less than 20 repeating units.

27. Composition according to Claim 26, characterized in that it also comprises at least one compound chosen from the group consisting of a latex, a water-soluble amphiphilic copolymer and fibres.

5           28. Article comprising one or more superposed layers each less than 5 centimetres thick, obtained according to the manufacturing process according to any one of Claims 1 to 25 or from the composition according to either of Claims 26 and 27.

10           29. Use of a composition according to Claim 26 or 27 for the manufacture of an article comprising one or more superposed layers each less than 5 centimetres thick, such as a coating, a covering or a grout.

15           30. Use of a composition according to Claim 26 or 27 for the manufacture of an article comprising one or more superposed layers each less than 5 centimetres thick, such as a fibrocement.